

# HOW MUCH DO WE KNOW ABOUT INDIAN MUSICAL THEORY

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At the First All-India Music Conference held in Baroda in 1916, Pandit V.N. Bhatkhande delivered a speech on *A Short Historical Survey of the Music of Upper India* in which the learned Pandit made the following weighty statements and asked some other questions without solving them :

“The *Gayan Samaj* would be a deplorably shaky superstructure without the firm foundation of science.”

“As far as the present state of our knowledge goes, the only work of any historical importance, yet discovered, that is likely to throw some useful light on the conditions of music in those times, is the *Natya Shastra* of Bharata.”

“Thus we see that, barring the *Natya Shastra* of Bharata, we are very poorly equipped in the matter of reliable records for a faithful history of the early Hindu period.”

“Although the *Sangita Ratnakara* is looked upon today as the first and foremost of our musical authorities, its music is not clearly understood in any part of the country: there is not a single scholar in India, at present, who has been successful in solving the *ragas* elaborately described in ‘*Ratnakara*’.” “The translators never seem to have understood even the *Shuddha* scale of Shrangadeva. (A.D. 13th Century)

“The *Shuddha* scale of *Raga Tarangini*, written by one Lochanakavi (A.D. 1162) and confined to the *Shadja Grama* only, was modern *Kaphi Raga*.”

“In the *Nagmat-e-Asaphi* (A.D. 1813) of one Mahomed Rezza, a nobleman of Patna, for the first time do we come across a reliable authority with *Bilaval* scale for its *Shuddha* scale. This scale, as you

know, is the foundation scale of our modern Hindustani music. It corresponds *very nearly* to the European scale of C major. I say, *very nearly*, advisedly because the *sixth note* of our Hindustani *Shuddha* scale is slightly *higher* than that of the European scale." "The Shuddha scale of *Sangita Sara* of Maharaja Pratap Singh of Jaipur (A.D. 1804) appears to be Bilaval."

Pandit Bhatkhande finally poses the two questions: "It would be a matter of the greatest importance to our music historians to find: When and How the *Bilaval* scale came to supplant the older *Shuddha* scale of Upper India?"

The Pandit did indeed impose upon the future scholars the obligation to find out why the *Kaphi Mela* of Lochanakavi proved unsatisfactory. The 20th century scholars in their turn feel it is their duty to find out whether Mahomed Rezza's *Bilaval Mela* with *high sixth* was also false and unsatisfactory; and whether Bharata's rational *Grama* system was not the world's most perfect system after all, though totally misinterpreted by his successors for more than 2000 years.

After an intensive research extending over 30 years into the *Grama-Shruti* and *Sadharan-Murchana* sections of *Natya Shastra*, the present writer has arrived at unassailable conclusions that are diametrically opposite to the views and misinterpretations of Bharata's successors in India such as Matanga, Avinavagupta, Lochanakavi, Shrangadeva, Ahobala, Mahomed Rezza, and foreign commentators like Clements, Fox-Strangways, Curt Sachs and Alain Danielou. These conclusions were drawn with mathematical proofs after an independent discovery by this writer of 3 kinds of new Geometries: The Geometry of the Musical Triangle, of the Musical Square, and of the Musical Hyperbola.

Interpreting Bharata *in his own terms* with the sufficient algebraic data provided by Bharata himself, the present writer has drawn 3 different algebraic equations which prove the following :

1. That MA-GRAMA (not SA-GRAMA) is the Standard Ascending Grama with the Central note NI of the Saptak as the bottom Tonic—true *Bilaval Mela*.
2. That SA-GRAMA is the Transposed Ascending Grama (a 5th above) with the Central note MA of the Saptak as the bottom Tonic—true *Khamaj Mela*.
3. That Bharata's First Sadharan Grama (i.e. MA-GRAMA with *antara gandhar*) is the Transposed Descending Grama (a 7th above) called GA-GRAMA with top Tonic DHA—true *Bhairavi Mela*.

4. That Bharata's Second Sadharan Grama (i.e. MA-GRAMA with *antara gandhar* and *kakali nishad*) is the Transposed Descending Grama (a 7th above) called DHA-GRAMA with top Tonic DHA—true *Asavari Mela*.
5. That the negative GA-GRAMA and the double negative DHA-GRAMA are upturned mirror-images, with identical descending intervals, of the positive MA-GRAMA and the double positive SA-GRAMA, respectively.

The discovery of the 4 Universal Basic Gramas of Nature as a universal phenomenon proves that Bharata (B.C. 400) was the first universalist and the greatest theorist on Fundamental Musicology in world history to date. He eclipses the unsuccessful effort of the ancients like Ling Lun, Pythagoras, Euclid, Ptolemy, and the moderns like Galileo, Kepler, Descartes, Newton and Helmholtz, with the solitary exception of the Italian Zarlino who advocated without proofs only one of the 4 Gramas, the positive *scala naturale*, about 200 years after Bharata.

For the benefit of readers of this article who might be curious to know how and why these conclusions were arrived at, I have this to say 'that the conclusions were based entirely on Bharata's own statements in *Natya Shastra* which the readers can verify for themselves : and it would be beyond the scope of this article to quote Bharata here every now and then. However, I would like to enumerate some of my findings in their logical order :-

- (1) Bharata's MA-GRAMA is the Standard Grama with the Tonic NI right in the centre of the *Saptak*. It is the first *murchana* called *Sauveri* the same as true *Bilaval Mela* or Western C major with low 3-shruti sixth. But its fourth *murchana*, with the Tonic at the end of the *Saptak*, is called *Shuddha Madhya*.
- (2) Bharata's SA-GRAMA is the Transposed Grama (a 5th above) with the Tonic MA right in the centre of the *Saptak*. It is the first *murchana* called *Uttaramandara*, the same as true *Khamaj Mela*. But its fourth *murchana* with the Tonic at the end of the *Saptak*, is called *Shuddha Shadja*.
- (3) The 7-note *Saptak* order and the 8-note *Ashtak* order of a Grama are concurrent and coexistent; and both are equally valid. The *Saptak* order has the Tonic in the Centre, while the *Ashtak* order has the Tonic at the Start.
- (4) The order of ascending intervals from the bottom Tonic of the positive MA-GRAMA is: 4,3,2, 4,3,4,2, *shrutis*. The order of ascending intervals from the bottom Tonic of the double-positive SA-GRAMA is the same, except that the last two intervals change places: 4,3,2,4,3,2,4. The orders of descending intervals from the top Tonic of negative GA-GRAMA and double-negative DHA-GRAMA are the same as those of MA-GRAMA and SA-GRAMA respectively.

CONCLUSION: Both Lochanakavi (A.D. 1162) and Mahomed Rezza (A.D. 1813) were wrong for taking the Transposed SHADJA-GRAMA instead of the Standard MADHYAM-GRAMA for their frame of reference, thus vitiating Indian Music Theory for a millenium.

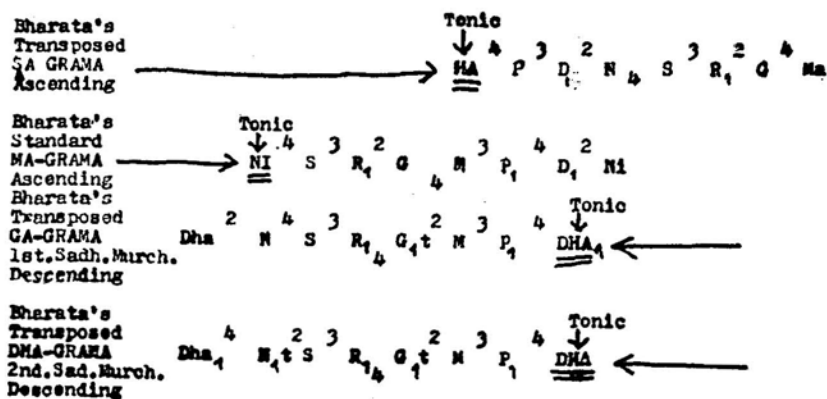
Lochanakavi took the initial note SA of the Saptak as the TONIC and thus obtained the *false Kaphi Mela* as the *Shuddha Scale*.

Mahomed Rezza took the final note NI of the *Saptak* as the TONIC and thus obtained the *false Bilaval Mela* (with *false sixth*) as the *Shuddha Scale*.

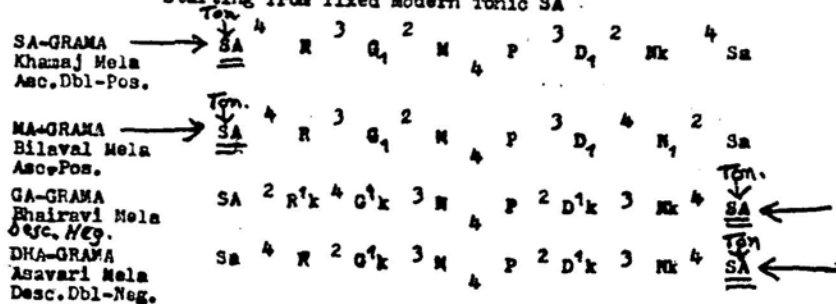
**Example 1. BHARATA'S "SA-GRAMA" SAPTAK**



**Example 2. BHARATA'S 4 UNIVERSAL BASIC GRAMAS**  
Derived from Standard MA-GRAMA with Tonic NI



**Example 3. BHARATA'S 4 UNIVERSAL BASIC GRAMAS**  
Starting from fixed Modern Tonic SA



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